

Recent Research on Measuring Receptive and Productive Vocabulary

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Abstract

This paper is concerned with research in measuring receptive and productive vocabulary knowledge in second language (L2) learning, including English as a second language (ESL) learning and English as a foreign language (EFL) learning. The paper will begin with a brief introduction to the role of vocabulary in language learning, and then an overview of terminology in vocabulary knowledge and size will be presented. Five most recent studies on receptive and productive vocabulary knowledge will be discussed together with some other studies that partially address the issue of receptive and productive vocabulary knowledge. The instruments employed to research the topic of receptive and productive vocabulary will be reviewed with the scoring methods used in each study. In addition, the subjects of the studies will be pointed out, and the results of the studies will be briefly discussed. Finally, some pedagogical implications will be suggested.

Vocabulary has traditionally been considered to be of crucial importance to language, as Zimmerman (1997) points out that it is central to language and of critical importance to the typical language learner. In fact, Wilkin (1972) emphasizes the role of vocabulary as follows: “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (p. 111). Although vocabulary is not a new notion, defining what a word is or what is involved in knowing a word is not an easy task. Nation (2001) postulates that knowing a word involves knowing its form (spoken, written, and word parts), its meaning (form and meaning, concepts and referents, and associations), and its use (grammatical functions, collocations, and constraints of use such as register, frequency...) and receptive and productive knowledge of a word cover all aspects of what is involved in knowing a word. For instance, knowing how a word sounds is the receptive aspect of spoken form and knowing how the word is pronounced is the productive aspect of spoken form. Therefore, receptive and productive knowledge of vocabulary are present in all three major components of a word: form, meaning and use. Being able to associate a word and a definition is just one aspect of vocabulary knowledge, so we need to be aware that words can have multiple meanings, and person’s knowledge of a word can be partial rather than complete (Read & Nation, 1986). In the literature, the terms “word” and “word family” are often used interchangeably. According to Nation (2001), a word family includes a headword, its inflected forms, and its closely related derived forms.

Vocabulary can be classified as receptive and productive, active and passive, comprehension and production, understanding and speaking, recognitional vocabulary and actual or possible vocabulary use (Melka Teichroew, 1982, cited in Read & Nation, 1986). Henriksen (1999, p. 304) proposes three dimensions to look at vocabulary development: a “partial-precise knowledge” dimension, a “depth of knowledge” dimension, and a “receptive-productive”

dimension, and he also points out that the division between receptive and productive vocabulary is generally accepted by most researchers. Laufer and Nation (1999) make a stronger claim when indicating that the distinction between receptive and productive vocabulary is the best known dimension to “knowing a word.” Despite the fact that the terms receptive and productive vocabulary are commonly used, there seems to be no clear definitions for them. Melka (1997) emphasizes the necessity to have a clear and adequate definition of what is actually meant by reception and production (cited in Henriksen, 1999). In an attempt to make clearer the receptive and productive distinction, Nation (2001) notes that receptive vocabulary use essentially involves perceiving the form of a word while listening or reading and retrieving its meaning and productive vocabulary use is wanting to express a meaning by speaking or writing and retrieving and producing the appropriate spoken or written form of a word.

In comparison to other aspects of vocabulary learning, receptive and productive knowledge of vocabulary may not have received as much attention. Morgan and Oberdeck (1930) may be considered the first study to investigate the disparity between receptive and productive vocabulary. In their study, receptive vocabulary size was found to be larger than productive vocabulary size. Five most recent research studies measuring receptive and productive vocabulary size are Fan (2000), Laufer (1998), Laufer and Paribakht (1998), Waring (1997) and Webb (2008). All five studies are primarily concerned with receptive and productive vocabulary size, but there seems to be differences in their research instrumentation and the scoring systems.

Whereas Read and Nation (1986) remark that checklist, multiple choice and translation are types of test that have been used by different researchers to measure both receptive and productive vocabulary, an overview of past and recent research studies have provided a slightly

more varied picture in terms of instruments used. Morgan and Oberdeck (1930) used a five-item multiple choice test to measure receptive vocabulary and a translation test to estimate productive vocabulary. As Webb (2008) indicate, the test format used in Morgan and Oberdeck's study greatly reduced the validity of the findings because whereas the receptive test allowed a 20% chance of correct guessing, the translation test allowed no chance of correct guessing. Currently, there seems to be three commonly used kinds of test to measure receptive and productive vocabulary knowledge: the Vocabulary Levels Test (VLT) by Nation (1990) for receptive vocabulary, the (Controlled) Productive Vocabulary Levels Test (PVLT) by Laufer and Nation (1999) for productive vocabulary, and the Lexical Frequency Profile (LFP) which is also called free productive vocabulary test by Laufer and Nation (1995). In the VLT, testees have to choose which of the six words match the three meaning provided and in the PVLT, testees are given a sentence where the first few letters of the tested word are given and the testees have to complete the word. In the Lexical Frequency Profile (LFP), written or spoken discourse produced by the subjects are analyzed and the vocabulary use is classified into frequent and infrequent words, and if the subjects are found to have higher percentage count of infrequent words, their free productive vocabulary is estimated to be larger (Meara & Fitzpatrick, 2000).

Both the VLT and PVLT are used in the studies conducted by Fan (2000), Laufer (1998), Laufer and Paribakht (1998), and Waring (1997). The LFP is used in Laufer (1998) and Laufer and Paribakht (1998) together with the two other tests. Noticeably, Webb (2008) is the only one that uses a different kind of test: translation tests to estimate receptive and productive vocabulary size of L2 learners. In Webb (2008), for the receptive test, testees are required to provide the L1 meaning (in Japanese) for a given L2 word (in English) and for the productive test, testees have to provide the L2 word (in English) for a given meaning in the testees' L1 (Japanese). To justify

for the use of different measuring instruments that were claimed to be able to provide a more accurate comparison between receptive and productive vocabulary knowledge, Webb points out four problems that may weaken the findings of previous studies in measuring receptive and productive vocabulary sizes. The first problem, according to Webb, is that the VLT allows a 17% chance of correct guessing but the PVLT offers virtually no or very little chance to correctly guess, so it is likely that the results from the Vocabulary Levels Test (VLT) is obviously higher than that from the Productive Vocabulary Levels Test (PVLT). The second problem is the VLT requires only knowledge of form and meaning while the PVLT requires additional knowledge of grammatical functions of words tested. The third problem that Webb indicates is the disparity between the formats used in the two tests. While the VLT is a recognition format test, the PVLT is a recall format one. The final problem is the PVLT could also be considered a receptive knowledge test because the first few letters of the tested word are provided.

Meara and Fitzpatrick (2000) state that the two tools used to measure productive vocabulary: the Productive Vocabulary Levels Test (PVLT) and the Lexical Frequency Profile (LFP) are both problematic. They note that the PVLT is basically effective at low levels but it is difficult to extrapolate about the testees' sizes of productive lexicon beyond a relatively small vocabulary. They also doubt that the LFP is able to encourage testees to 'display' their vocabulary in a way that the test would require. The LFP is not cost effective as it requires a lot of time from the testees to create texts containing infrequent words (Meara & Fitzpatrick, 2000). They introduce Lex30, a productive vocabulary test which resembles the LFP as there is no predetermined set of response target words for the subjects to produce. Lex30, according to Meara and Fitzpatrick, is basically a word association test where testees are provided with a list of stimulus words, and they are required to produce responses to the stimuli. They also add that

the principle advantages of Lex30 are that it is very easy to administer and little time is required to finish, so Lex30 could be used together with other tests as part of a vocabulary test battery.

The scoring methods employed in the studies investigating receptive and productive knowledge of vocabulary could be very interesting to look at as various levels of grading strictness have been used. In all four studies (Fan, 2000; Laufer, 1998; Laufer & Paribakht, 1998; Waring, 1997) that used the VLT, probably, because the nature of the test does not allow much space for ambiguity or vagueness, it is much easier to decide a correct and incorrect answer. Therefore, all four studies apply the same grading criterion which is to award one point for each right answer. However, there is a disparity in the scoring method for the PVLT among the studies. Whereas in Laufer (1998) and Laufer and Paribakht (1998) answers that are semantically correct are marked as correct and answers with wrong grammatical form and spelling errors are also considered correct, in Fan (2000) all answers must be used grammatically and with correct spelling to be considered correct. Waring (1997) scores the PVLT slightly differently. All answers in the PVLT are scored with a “more sensitive measure”. Half a point is given to answers with wrong spelling but the overall shape of the word is similar to the target word, and answers with grammatical mistakes are also awarded half a point. Nonetheless, if an answer is spelt incorrectly and it looks so similar to another English word, the answer is marked as incorrect, so no point is given.

As a research study using translation tests, Webb (2008) takes a new approach to scoring with two levels: the sensitive and the strict for both receptive and productive vocabulary knowledge tests. In the sensitive scoring system, responses which are misspelled or used with the wrong grammatical form are marked as correct. For a misspelled word to be accepted as correct, it must be close to the target response and it must not look similar to another word. In the strict

system of scoring, responses are only marked if they are correctly spelled. Responses with the wrong grammatical forms are accepted as correct for both sensitive and strict scoring systems (Webb, 2008).

In terms of subjects in the five research studies (Fan, 2000; Laufer, 1998; Laufer & Paribakht, 1998; Waring, 1997; Webb, 2008), EFL students are examined in all five studies with the only exception in Laufer and Paribakht (1998) where an ESL group of students in Canada is investigated to compare with EFL students in Israel. EFL students in Japan are researched in Waring (1997) and Webb (2008); EFL students in Israel in Laufer (1998) and Laufer and Paribakht (1998); and EFL students in Hong Kong in Fan (2000). It is likely that research in receptive and productive vocabulary knowledge is more interested in EFL learners than ESL ones in the studies reviewed.

The frequency word bands of 2000, 3000, 5000, and 10,000 are used in Laufer (1998), Laufer and Paribakht (1998) and Waring (1997) to measure receptive and productive vocabulary knowledge, but Fan (2000) only tests at 2000 and 3000 word frequency level. Webb (2008) tests at three frequency word bands ($701^{\text{st}} - 1,900^{\text{th}}$, $1,901^{\text{st}} - 3,400^{\text{th}}$, and $3,401^{\text{st}} - 6,600^{\text{th}}$).

The results that these studies (Fan, 2000; Laufer, 1998; Laufer & Paribakht, 1998; Waring, 1997; Webb, 2008) have all obtained have one notable result: receptive vocabulary knowledge is generally found to be larger than productive vocabulary knowledge for both EFL and ESL learners. Fan (2000) is an interesting study that uses an additional questionnaire to identify strategies that could help enhance active vocabulary knowledge. Fan found a somewhat obvious result suggesting that students more proficient in the L2 possessed a larger passive vocabulary. However, Fan did not find consistent relationship between language proficiency and active and

passive vocabulary knowledge so the gap between active and passive vocabulary knowledge may not be related to the students' proficiency in the L2 (Fan, 2000). Out of 60 vocabulary strategies under investigation, Fan was able to identify 7 strategies that "were found to have a positive and significant correlation with the scores in the Active Vocabulary Test" (p. 115), but interestingly although the students consider the strategies to vocabulary useful, they do not use them often.

Measuring three types of vocabulary knowledge: passive, controlled active and free active, Laufer (1998) found that passive vocabulary knowledge is always larger than controlled active knowledge, and both passive and controlled active vocabulary knowledge were found to show impressive increases. Nevertheless, it was also found that free active vocabulary did not seem to progress. To explain this phenomenon, Laufer (1998) provides two possible reasons. First, teachers focusing on communicative activities may be more concerned with helping learning to get meaning across. Second, correctness is often more valued than lexical richness in the conventional grading system. Therefore, learners are not much encouraged to take a risk and use more difficult words. Additionally, Laufer indicates that traditional re-write tasks often focus more on alternative structures rather than on alternative vocabulary.

Laufer and Paribakht (1998) were able to confirm the perception that learners' passive vocabulary knowledge is larger than their controlled active vocabulary, and their results also indicate that learners with larger passive vocabulary also possessed larger controlled active vocabulary and slightly better free active vocabulary in writing. Controlled active vocabulary has been found to grow at a slower rate than passive vocabulary in both EFL and ESL contexts. Laufer and Paribakht (1998) suggest that passive vocabulary is likely to take a long time to become active vocabulary or it may never become part of it. A point worth mentioning is that intermediate and advanced EFL learners were found to have significantly better controlled active

vocabulary than the ESL ones and the advanced EFL learners also showed significantly better free active vocabulary (Laufer & Paribakht, 1998). They explain this paradoxical phenomenon in two ways. Firstly, EFL learners might have invested more effort than ESL ones to learn passive vocabulary and maybe greater mental effort required for conscious learning led to activation of passive vocabulary in EFL learners. Secondly, maybe because ESL learners are exposed to richer passive vocabulary and there was a rapid growth of passive vocabulary but their activation lagged.

Despite the fact that both Waring (1997) and Webb (2008) have the same conclusion that receptive vocabulary is larger than productive vocabulary based on their data, there seems to be a significant disparity between the details in both studies. Whereas Waring remarks that “receptive vocabulary was always larger than productive vocabulary for all subjects at each frequency band” (p.4), Webb asserts that “scores were occasionally higher on a learner’s productive test than on his or her receptive test at the same frequency band”(p. 92). To explain for the difference, Webb (2008) postulates that the mismatch might have occurred because the learners were tested for different receptive and productive words. Besides, Waring (1997) reasons that there seem to be a much heavier demand on a learner when faced to produce a word in comparison with recognizing it, so a learner’s productive ability is likely to be acquired later than the receptive for any word. Contending that the assumption that receptive knowledge precedes productive one may seem logical, Webb (2008) states that it might not be totally correct as learners may gain productive knowledge of some features of vocabulary knowledge before gaining some aspects of receptive knowledge. In addition, Waring (1997) seemingly assume that production is more difficult than reception . In other words, productive knowledge is harder to acquire than receptive knowledge.

The five major research studies reviewed and some other studies and articles on receptive and productive vocabulary knowledge mentioned in this paper have provided a much clearer and deeper understanding about vocabulary knowledge and use in general and receptive and productive vocabulary in particular. One problem remains in this research area is the inconsistency of the terminology used for the two types of vocabulary. Although Melka Teichroew (1982) points out that vocabulary can be classified using many different terms: receptive-productive, active-passive, comprehension-production, understanding-speaking, recognitional vocabulary—actual or possible vocabulary, the two pairs receptive-productive and active - passive are more commonly used. Particularly in the five main studies reviewed, Waring (1997) and Webb (2008) use the terms receptive and productive vocabulary but Fan (2000), Laufer (1998), and Laufer and Paribakht (1998) use the terms active and passive vocabulary. Although there is a slight disparity in the terminology used, all studies seem to consistently refer to the same kind of vocabulary knowledge. Receptive /passive and productive /active have been used interchangeably throughout the studies.

In terms of research instrumentation to investigate receptive and productive vocabulary size, the Vocabulary Levels Test (VLT) and the Productive Vocabulary Levels Test (PVLT) which is also called controlled active vocabulary test have been widely used to measure receptive and productive vocabulary size, respectively. These two kinds of tests are quite familiar to learners and teachers. It is clear that guessing can easily be made with a high correct chance in the former test, but it is almost impossible to guess in the latter one which makes it harder. Thus, the results of the first are obviously likely to be better than the second. The Lexical Frequency Profile (LFP) which is also called free active vocabulary test seems to be a good test to test words in real use, but there seems to be a problem with this kind of free productive vocabulary

test where testees have to write a composition about one of the two topics given within 300 or 400 word tokens (or words) because testees may not have much to write about the topics, so the numbers of words produced are not many and the number of infrequent words obtained may not reflect the real lexicon of the learners. Lex30 is an easier productive vocabulary test in the sense that it does not require testees to produce the exact denotative meaning of the stimulus word and there are a lot of opportunities for testees to provide associative meanings of the stimulus word. The test may be used as a classroom activity where learners' associative ability is encouraged through their imagination or experience. However, Lex30 is also problematic if it is used to measure productive vocabulary size, because it allows too much ambiguity and vagueness that the test raters may run the risk of overestimating or underestimating their productive vocabulary size. A word can have different associative meanings to different people depending on testees' experience and imagination, so a test rater may have difficulty determining if the given word for the stimulus word is right or not. As Meara and Fitzpatrick (2000) suggest, thanks to its practical administrative advantages, the test may be used together with other tests as part of a vocabulary test battery. Generally, the test seems more appropriate for learning practice rather than for measuring productive vocabulary in an L2.

Webb (2008) is the only study that uses translation tests to measure both receptive and productive vocabulary size of L2 learners. This kind of test may reduce the chance of guessing for both receptive and productive test as testees must write the tested word. As Webb indicates, receptive vocabulary test is one where testees have to write their L1 meaning for the tested word provided in L2 and productive test is one where testees have to write the L2 word for a given meaning written in their L1. In reality, translation tests can be advantageous for learners in learning contexts where translation is practiced and encouraged, but it may not be valid and

relevant for learners who have been discouraged to use translation in their learning process. For instance, in Vietnam these days, translation is highly discouraged in language learning and learners are rarely provided a Vietnamese equivalent for an English word. Therefore, if learners who have been taught not to use translation take the translation tests, they may have difficulty doing the tests well, and their real vocabulary size may not be accurately measured.

An extremely interesting point that can easily be found in all research studies reviewed and discussed in this paper is that all studies have used a written test format to measure receptive and productive vocabulary size. This could be a weakness in terms of research design, because vocabulary is not always used in written form, but it is even more often used in spoken form. Therefore, it may be more logical to measure spoken receptive and productive vocabulary knowledge in speaking and listening. In fact, it is absolutely possible for a learner to be able to understand a word or use a word in his or her spoken discourse but that learner may not be able to recognize or recall it in written form. Researchers should be well aware of this so they can design better and more innovative instruments to measure L2 learners' vocabulary knowledge in a more authentic approach. Hopefully, in a very near future, more research studies estimating L2 learners' receptive and productive vocabulary size will be done to inform teachers and students with more accurate results, so that teaching and learning activities in the language classroom can be better in vocabulary learning and teaching.

Furthermore, as Nation (2001) suggests, knowing a word involves many aspects of the word not just meaning and form in the written form but also in spoken form. Knowledge of a word is not restricted to its associations but it also involves its collocations, grammatical functions and constraints on use (where, when, and how a word is expected to be used). And certainly knowledge of a word always involves receptive and productive knowledge of the word.

If researchers seriously take what has been indicated by Nation into account, they would not take the task of measuring learners' receptive and productive knowledge of vocabulary so simply by using the available tests. More sophisticated and well-designed instruments are very much needed to estimate L2 learners' vocabulary knowledge more fully and thoroughly. If grammatical mistakes are not counted as practiced in some studies, full knowledge of the word cannot be measured and if written form is tested only, there is no guarantee that testees are able to say the word correctly in terms of pronunciation and collocational use.

Research in the field of vocabulary learning is important, essential, insightful and valuable to language learners, teachers and researchers alike. Wilkin (1972) does not seem to overemphasize the role of vocabulary in language learning when indicating that nothing can be conveyed without vocabulary. Admittedly, vocabulary alone cannot make a person communicate effectively in a second or foreign language. However, many students in EFL contexts as well as ESL contexts have seemed to face one common problem that is not knowing or being able to recall or recognize words when using English for communication. On the surface of it, it is normal curiosity to want to measure vocabulary knowledge of language learners from researchers' perspective. Nonetheless, as Webb (2008) indicates, knowing students' receptive and productive vocabulary sizes enables teachers to gauge whether the students can understand certain text or speak or write about a certain topic. Research can produce empirical evidence to show that a large number of words have been found to be learned in an 'unnatural' context so it is likely that classroom instruction is able to provide an optimal setting for vocabulary learning (Laufer, 1998). Moreover, as it may commonly be agreed that learners in an ESL context can benefit a lot in learning the language in the real environment, it should also be logical to believe that language learning in such context will yield better results. Nonetheless, Laufer and Paribakht

(1998) found out that intermediate and advanced EFL students were found to have better controlled active vocabulary than ESL students with the same passive vocabulary size. Probably, this is an encouraging indicator for all EFL learners to be aware of the fact that despite their lack of real English speaking situational contexts to learn and practice the language in real life situations, EFL learners can still be able to do as well or even better than those students in ESL contexts if learning and teaching activities in the EFL classroom are well designed and conducted in a way that facilitates learners in their learning process.

The role of activities and instructional methods in vocabulary learning and teaching should be paid better attention to incorporate vocabulary teaching in teacher training courses. Informing teachers of the current research results and the implications of such research studies may influence and transform teachers in their beliefs and practice about teaching and learning vocabulary in a second or foreign language. Additionally, with a clear and definite goal in mind, teachers can help learners improve their receptive and productive knowledge of English vocabulary more effectively. Webb (2009) found that the kinds of tasks used with the students may have an effect on what second language learners can or cannot do with words receptively and productively, and receptive tasks such as providing definitions or translation or looking up words in a dictionary may help to increase receptive knowledge of words and improve comprehension, whereas productive tasks such as speaking or writing help improve productive knowledge of words. Therefore, depending on the goal of the task or program, different types of tasks could be utilized and a combination of both receptive and productive tasks may be most effective if the goal is to improve overall language skills (Webb, 2009). Raising teachers' awareness of the fact that the types of tasks for vocabulary learning and teaching can have an influence on learning outcomes and performance of the students is also of critical importance for

teacher trainers. Webb (2005) is reasonable when stating that vocabulary learning is likely to be receptive when it is taught in the class and teachers may only tell learners meanings or definitions of words or use them in sentences but they do not often ask them to use words except for spelling or pronunciation. Learners need to be helped and encouraged to use words that they have already learned beyond the normal practice within sentence level, meaning, spelling and pronunciation, so that they can be able to do more creatively with the words they have learned.

References

- Fan, M. (2000). How big is the gap and how to narrow it? An investigation into the active and passive vocabulary knowledge of L2 learners. *RELC Journal*, 31, 105-119.
- Henriksen, B. (1999). Three dimensions of vocabulary development. *Studies in Second Language Acquisition*, 21, 303-317.
- Laufer, B. (1998). The development of passive and active vocabulary: Same or different? *Applied Linguistics*, 19, 255-271.
- Laufer, B and Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, 16, 307-322.
- Laufer, B. and Nation, I. S. P. (1999). A vocabulary size test of controlled productive ability. *Language Testing*, 16, 36-55.
- Laufer, B. and Paribakht, T. (1998). The relationship between passive and active vocabularies: Effects of language learning context. *Language Learning*, 48, 365-391.
- Meara, P. and Fitzpatrick, T. (2000). Lex30: an improved method of assessing productive vocabulary in an L2. *System* 28, 19-30.
- Melka, F. (1997). ‘Receptive vs. productive aspects of vocabulary’. In Schmitt, N. and McCarthy, M. (Eds.): *Vocabulary: Description, Acquisition and pedagogy* (pp. 84-102). New York: Cambridge University Press.
- Nation, I. S. P.(1990). *Teaching and learning vocabulary*. Rowley, MA: Newbury House.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press.

Read, J. and Nation, P. (1986). *Some issues in the testing of vocabulary knowledge*. Paper presented at a language testing symposium in honor of John B. Carroll and Robert Lado (Quiryat Anavim, Israel, May 11-13, 1986).

Teichroew, M. F. J. (1982). Receptive versus productive vocabulary: a survey. *International Studies Bulletin*, 6, 5-33.

Waring, R. (1997). A comparison of the receptive and productive vocabulary sizes of some second language learners. *Immaculata* (Notre Dame Seishin University, Okayama), 1, 53-68.

Webb, S. (2005). Receptive and productive vocabulary learning: The effects of Reading and Writing on word knowledge. *Studies in Second Language Acquisition*, 27, 33-52.

Webb, S. (2008). Receptive and productive vocabulary sizes of L2 learners. *Studies in Second Language Acquisition*, 30, 79-95.

Webb, S. (2009). The effects of Pre-learning Vocabulary on Reading Comprehension and Writing. *The Canadian Modern Language Review*, 65, 3, 411-470.

Wilkins, D. (1972). *Linguistics in language teaching*. London: Arnold.

Zimmerman, C. B. (1997). 'Historical trends in second language instruction'. In Coady, J. and Huckin, T. (Eds.): *Second language vocabulary acquisition* (pp.5-19). Cambridge University Press.